

(12) United States Patent

Kudymov et al.

(54) INTEGRATED HIGH PERFORMANCE LATERAL SCHOTTKY DIODE

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See application file for complete search history.

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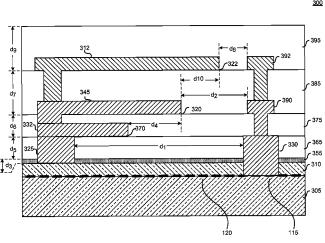
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(57)ABSTRACT

A diode includes a two-dimensional electron gas formed in a heterojunction defined between first and second semiconductor material layers. First and second layers of insulating material are disposed on the second semiconductor laver. First and second electrodes are disposed in the second layer of insulating material. The first electrode is coupled to the second semiconductor material layer. The second electrode is coupled to the heterojunction. Third and fourth layers of insulating material are disposed on the second insulating layer. A first via is disposed in the fourth layer of insulating material and coupled to the second electrode. A first field plate is disposed in the fourth layer of insulating material. An edge of the first field plate laterally extends towards first via. The first via is separated from an edge of the first via. The first field plate is coupled to the first electrode.

14 Claims, 7 Drawing Sheets



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